
A New Species of *Pelexia* (Orchidaceae, Spiranthinae) from São Paulo, Brazil

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ABSTRACT. A new species of *Pelexia* Poit. ex Lindl. (Orchidaceae, Spiranthinae) occurring in central São Paulo, southeastern Brazil, is described and illustrated as *P. vinosa* A. W. C. Ferreira, M. I. S. Lima & Pansarin. *Pelexia vinosa* is recognized by its leaves that are present at flowering and its dark purple leaf blades with reddish margins. Inflorescences are sparsely pubescent and reddish. The red sepals contrast with the white hyaline petals and labellum. The species is notable for its spurlike nectary that is parallel and adnate to the ovary. The new species is morphologically similar to *P. laxa* (Poepp. & Endl.) Lindl. In addition, the need to preserve native areas of the interior of São Paulo State (habitat of *P. vinosa*) is discussed.

RESUMO. Uma nova espécie de *Pelexia* Poit. ex Lindl. (Orchidaceae, Spiranthinae) que ocorre na região central do estado de São Paulo, é descrita e ilustrada como *P. vinosa* A. W. C. Ferreira, M. I. S. Lima & Pansarin. *Pelexia vinosa* é reconhecida pelas folhas que estão sempre presentes durante o período de floração, e pelas lâminas foliares roxo-escuras com margens avermelhadas. As inflorescências são avermelhadas e esparsamente pubescentes. As pétalas avermelhadas contrastam com as pétalas e labelo, que são brancos, e pelo nectário paralelamente disposto e adnato ao ovário. Essa nova espécie é morfologicamente semelhante à *P. laxa* (Poepp. & Endl.) Lindl. A necessidade de conservação de áreas nativas no interior do estado de São Paulo (hábitat de *P. vinosa*), também é discutida.

Key words: Atlantic rainforest, cerrado, IUCN Red List, Orchidaceae, *Pelexia*, Spiranthinae.

Within the Orchidaceae, the tribe Cranichideae is cosmopolitan in distribution and comprises ca. 90 genera and 1600 species that are further recognized among six subtribes, one of which is the Spiranthinae (Salazar, 2003). The Spiranthinae encompass 39 genera, of which *Pelexia* Poit. ex Lindl. contains 76 species distributed from Mexico to Argentina (Hoehne, 1945; Pabst & Dungs, 1975; Salazar, 2003). *Pelexia* consists of terrestrial, lithophytic, or more rarely epiphytic herbs (Salazar, 2003). In Brazil, 38 species of *Pelexia* are found (Barros et al., 2012), occurring in several vegetation physiognomies, including ombrophilous (e.g., Miller & Warren, 1996; Romanini & Barros, 2007), semideciduous mesophytic (e.g., Pansarin & Pansarin, 2008, 2010), Amazonian forests (Ribeiro, 1992), as well as cerrado vegetation (e.g., Batista & Bianchetti, 2003). Furthermore, Brazilian species of *Pelexia* can be found in diverse habitats that include marshy areas, rocky outcrops, and both dry and wet grasslands (Cogniaux, 1893–1896; Hoehne, 1945; Pabst & Dungs, 1975; Sprunger et al., 1996). Seven species of *Pelexia* are known to occur in the central region of the state of São Paulo (Ferreira et al., 2010). This is an area consisting of an ecotone between two important Brazilian biomes, namely the cerrado and Atlantic forest (Kronka et al., 1993; Soares et al., 2003). The climate of the region is classified as “Cwa,” namely mesothermic with a dry winter season (Köppen, 1948). The new species described herein was discovered while the authors carried out a floristic survey of the Orchidaceae in central São Paulo in southeastern Brazil.

The genus *Pelexia* is characterized by the presence of fleshy and fasciculate roots, and the leaves are

organized in a rosette, but are generally absent during the flowering time. The flowers of *Pelexia* are resupinate and arranged in racemes or spikes. The lateral and dorsal sepals are glandular pubescent, and the lateral sepals are variably connate at the base, generally forming a spur. The labellum is united to the base of the column and the pollinarium is formed by two oblong to clavate pollinia (Ackerman, 1995; Salazar, 2003).

MATERIALS AND METHODS

Fresh and herbarium material of flowering and fruiting plants were used for the description. Illustrations were based on specimens collected in the field and then grown in a greenhouse at the Botany Department, Federal University of São Carlos, within the municipality of São Carlos (approx. 22°01'S, 47°53'W; 854 m.s.m.) until flowering. Floral features were drawn using a stereomicroscope with an attached camera lucida. Vegetative and floral structures were photographed with a digital camera (Canon EOS Rebel X, Tokyo, Japan) and through a stereomicroscope (Stereozoom Leica S8 APO, Heerbrugg, Switzerland) with an integrated photo output. Terminology for describing leaf shapes follows Radford et al. (1974). Features specific to the Orchidaceae were based on Dressler (1993) and Pridgeon et al. (1999). Original protologues and digital images of holotypes (K, NY, RENZ, S, SP, and W) of related species of *Pelexia* were consulted.

Pelexia vinosa A. W. C. Ferreira, M. I. S. Lima & Pansarin, sp. nov. TYPE: Brazil. São Paulo: Itirapina, Itaqueri da Serra, 22°20'S, 47°52'W, 860 m.s.m., 18 Feb. 2007 (fl.), A. W. C. Ferreira s.n. (holotype, UEC 148368). Figures 1, 2.

Pelexia vinosa ab omnibus aliis speciebus sui generis foliis atropurpureis marginibus rubentibus, scapo rubente leviter pubescente, sepalis rubris sparsim pubescentibus, petalis albo-pellucidis, calcaribus ad ovarium parallelo adnatoque distinguenda; a *Pelexia laxa* (Poepp. & Endl.) Lindl. foliis minoribus immaculatis apice acuto, sepalis lateralibus non decurrentibus, terminali obovato, labello omnino albo lobo apicali transverse ovali, lateralibus falcatis atque ovario recto vel paulo arcuato differt.

Sympodial and terrestrial herbs to 28 cm tall; roots 3–7 × 0.5–0.8 cm, not ramified, cream to whitish in color, sparsely pubescent; stem reduced, with up to 5 leaves. Leaves 4.5–13 × 3–7.3 cm, blade adaxially dark purple, abaxially paler purple, asymmetrically ovate, subcoriaceous, apex acute, margin entire, reddish, the central vein dark purple; pseudopetiole 1.8–2.8 × 0.25–0.35 cm, cylindrical, with a longitudinal keel adaxially. Inflorescence 15–28 ×

0.5 cm, racemose, lateral, erect, with 12 to 22 flowers successively opening; scape reddish, pubescent, with 6 to 11 bracts; bracts 1.8–2.5 × 0.4–0.5 cm, lanceolate, adpressed. Flowers resupinate; ovary and pedicel ca. 1–1.3 cm, red-tinged, sparsely pubescent; sepals red with small white dots at the apex, externally pubescent; dorsal sepal 1.2 × 0.6 cm, symmetrically obovate, involving the column, apex acuminate; lateral sepals asymmetrically linear to lanceolate, not decurrent, embracing the labellum, its base adnate to the column foot and the ovary apex forming a spurlike nectary, marginally white from mid-portion to the apex, apex rounded; nectary longitudinally adnate to the ovary; petals 1.2 × 0.3 cm, spatulate, red from median portion to the base, white and hyaline toward the apex, margin entire, apex acute and with small hyaline glandular dots; labellum 1.4 × 0.6 cm, 3-lobed, canaliculate, incurved, white, with 2 basal projections; these projections 5 × 1 mm, oblong, apical lobe transversally oval, lateral lobes triangular, falcate, partially overlapping the apical lobe; column 9 × 1.5 mm, clavate, white, with a white rostellum and a yellow stigmatic surface; anther cap 4 × 2 mm, deltoid; pollinarium composed of 2 clavate, bipartite and white pollinia, and a terminal, ovate and dorsally adhesive viscidium. Fruit 1.3 × 0.7 cm, erect, cylindrical.

Distribution and habitat. *Pelexia vinosa* is only known from the type locality in São Paulo, where it occurs in an ecotone between cerrado vegetation and semideciduous mesophytic forest. *Pelexia vinosa* was found close to a stream in a gallery forest.

IUCN Red List category. Based on the evidence that the surrounding natural habitat has been developed as pasturelands and cultivation, mainly for sugarcane (*Saccharum officinarum* L.), *Pelexia vinosa* is considered a Vulnerable (VU) species, according to IUCN (2001) criteria.

Phenology. *Pelexia vinosa* was observed to flower from January to March, with each flower lasting from 10 to 12 days. The fruits are dehiscent from March to May.

Etymology. The specific epithet of *Pelexia vinosa* refers to the dark purple coloration of the leaf blades.

Taxonomic notes. *Pelexia vinosa* is easily recognized by its dark purple leaves with reddish margins that remain present at flowering, by its sparsely pubescent and reddish inflorescence, and by the reddish sepals that contrast well with the white to

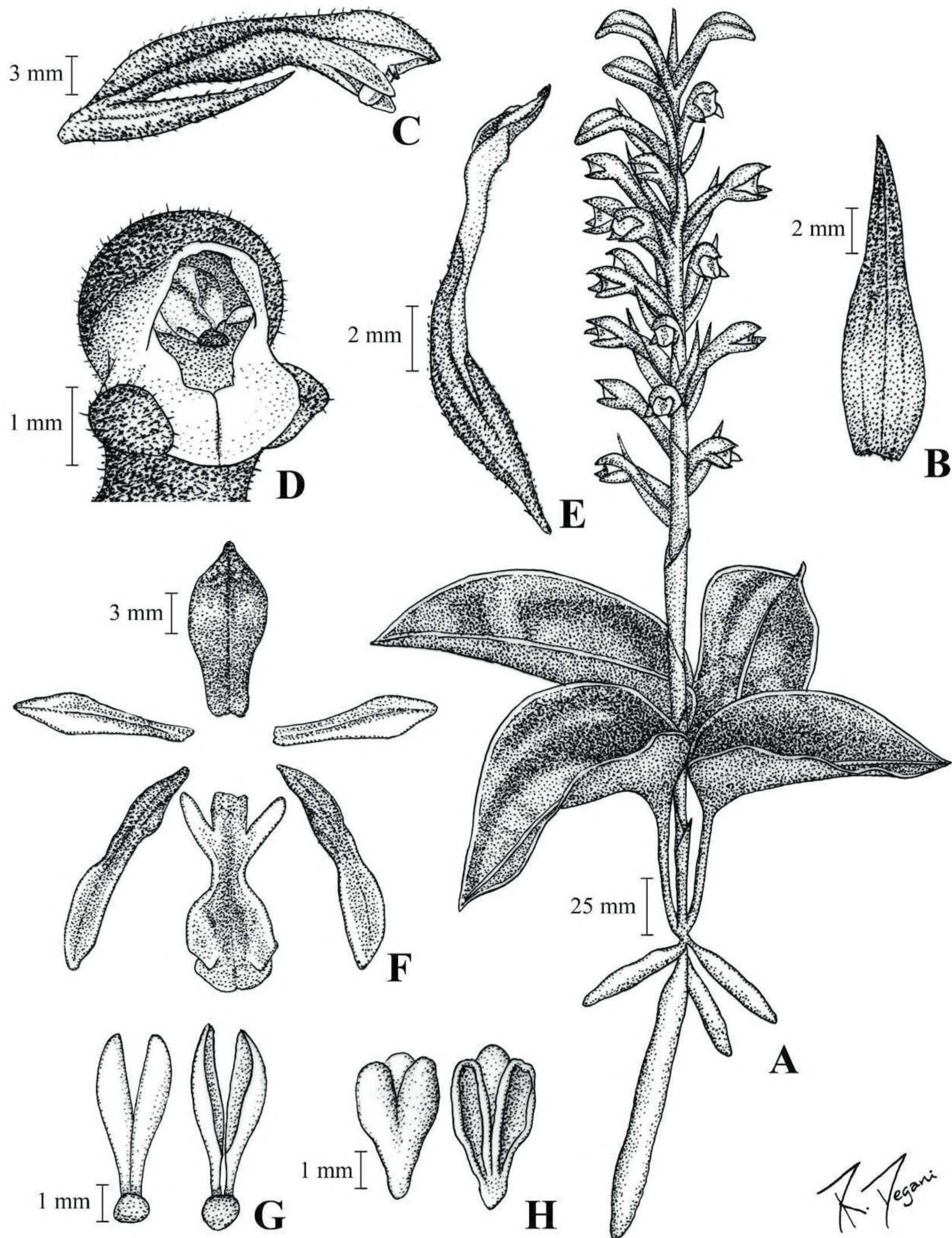


Figure 1. *Pelexia vinosa* A. W. C. Ferreira, M. I. S. Lima & Pansarin. —A. Flowering plant. —B. Bract. —C. Flower, lateral view, with a floral bract visible below. —D. Flower, frontal view. —E. Ovary and column, lateral view. —F. Dissected perianth parts. —G. Pollinarium, adaxial (left) and abaxial (right) views. —H. Anther, adaxial (left) and abaxial (right) views.

hyaline petals and labellum, and with the spur parallel and completely adnate to the ovary. The new species is closely related to *P. laxa*. However, *P. vinosa* differs from *P. laxa* by the absence of maculae on the leaf blades, the more congested inflorescence, the lateral sepals not decurrent, the dorsal sepal spatulate, and the labellum being entirely white with an apical lobe that is transversally oval and triangular and with lateral lobes that are falcate. In *P. laxa*, the leaves are maculate, the inflorescences are more elongate and lax, the lateral sepals are decurrent, the dorsal sepal is elliptic, and the labellum is yellow in the middle with an apical lobe that is cordiform and with lateral lobes that are triangular. Although Barros et al. (2012) reported the occurrence of *P. laxa* from

northern Brazil, this species was recorded from the central region of the state of São Paulo, flowering from September to November (Ferreira et al., 2010). Because species of *Pelexia* are cultivated as ornamental orchids (Salazar, 2003), we believe that the new species also has ornamental potential, based on its beautiful dark purple leaf blades and the reddish inflorescences and sepals that markedly contrast with the white petals and labellum.

In Brazil, native areas of the cerrado vegetation, the Atlantic rainforests, and ecotonal areas between both biomes (the natural habitat of *Pelexia vinosa*) have been considered crucial for preservation and conservation as rich in species diversity and endemism. Currently, these Brazilian biomes are

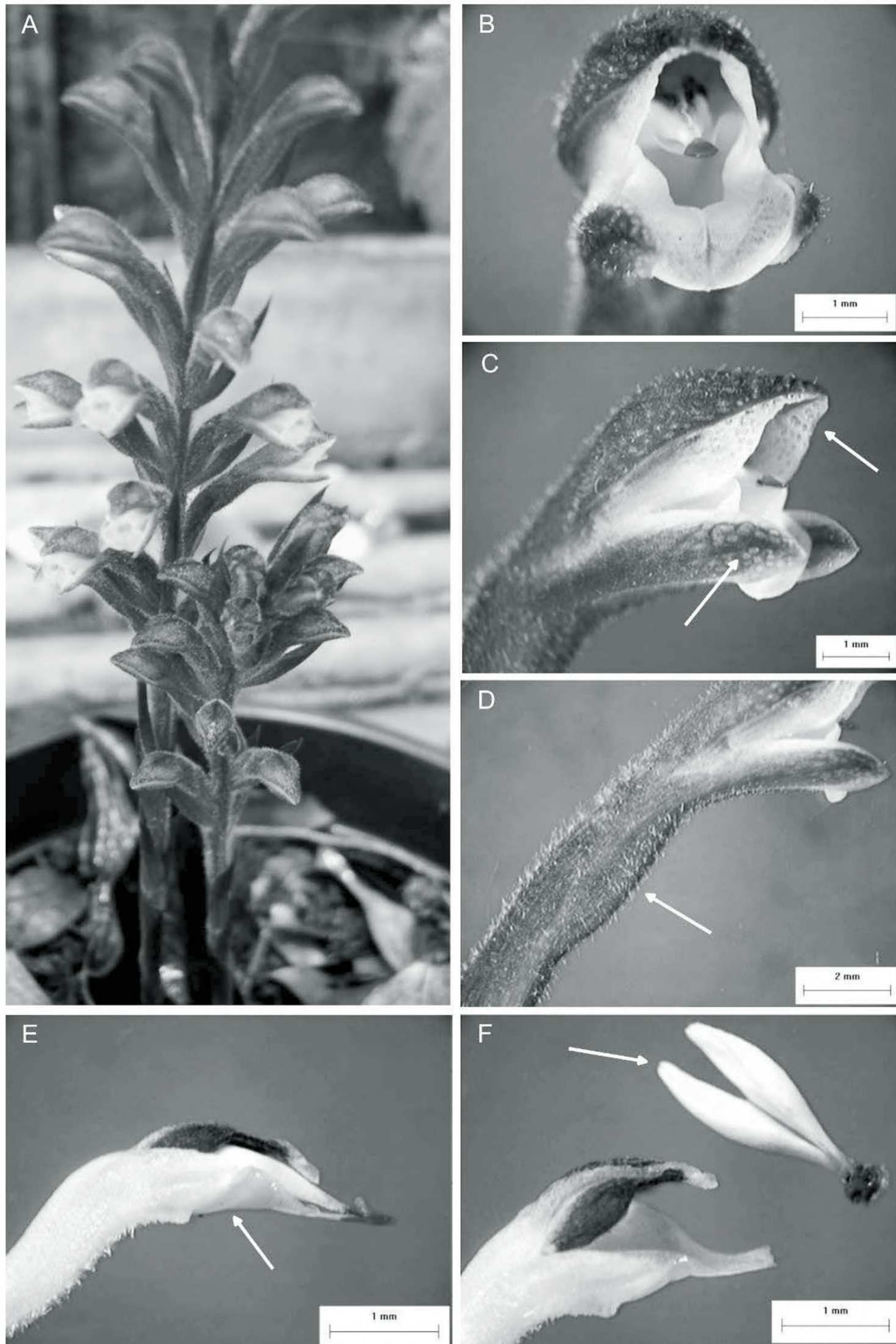


Figure 2. *Pelexia vinosa* A. W. C. Ferreira, M. I. S. Lima & Pansarin. —A. Flowering plant. —B. Flower, frontal view. —C. Flower, lateral view. Note the glandular dots on sepal and petal apices (arrows). —D. Detail of flower, lateral view, revealing the spur entirely adnate to the ovary (arrow). —E. Detail of the column, with the yellow stigmatic surface indicated by arrow. —F. Column apex at lower left with a detached pollinarium indicated by arrow. Note the brown anther cap.

seriously affected by anthropogenic disturbance due to the establishment of pasturelands, cultivation, and property speculation (Myers et al., 2000). In the Atlantic forest, particularly, numerous species were probably extinct before even being known and thus natural habitats have been lost (Morellato & Haddad, 2000). Currently, the Atlantic Forest is reduced to 4%–8% of its original coverage and the need to preserve these natural areas is urgent.

Specimens examined. BRAZIL. **São Paulo:** Itirapina, Itaqueri da Serra, 22°20'S, 47°52'W, 860 m.s.m., 18 Feb. 2007 (fl.), A. W. C. Ferreira s.n. (UEC 148368); Itirapina,

Itaqueri da Serra, 22°20'S, 47°52'W, 860 m.s.m., 21 Feb. 2007 (fl.), A. W. C. Ferreira s.n. (SPFR 13651).

Acknowledgments. The authors thank the curator of herbarium UEC, Carlos Aparecido Casali (Department of Botany, Federal University of São Carlos) for assistance during fieldwork, Ricardo Milanetti Degani for the illustrations, and Américo Docha Neto and Dalton Holland Baptista (Orchidstudium Project) for valuable suggestions. Gratitude is expressed to the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA) (process no. 02001.003951/2006–50) and Instituto Florestal (process no. 40.380/2006) for granting permission for

fieldwork. This study has been part of the doctoral thesis of the first author at the Department of Botany, Post-Graduate Program in Ecology and Natural Resources, Federal University of São Carlos, São Paulo, Brazil. Financial support was provided by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES).

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